



US 20200176777A1

(19) United States

(12) Patent Application Publication (10) Pub. No.: US 2020/0176777 A1
(43) Pub. Date: Jun. 4, 2020(54) ELECTRODE BINDER SLURRY
COMPOSITION FOR LITHIUM ION
ELECTRICAL STORAGE DEVICES(71) Applicant: PPG Industries Ohio, Inc., Cleveland,
OH (US)(72) Inventors: **Stuart D. Hellring**, Pittsburgh, PA
(US); **Scott W. Sisco**, Glenshaw, PA
(US); **Jacob W. Mohin**, Pittsburgh, PA
(US); **Shanti Swarup**, Allison Park, PA
(US); **Calum H. Munro**, Gibsonia, PA
(US); **Olivia L. Jones**, Cranberry
Township, PA (US); **Ryan T. Plazio**,
Apollo, PA (US)(73) Assignee: PPG Industries Ohio, Inc., Cleveland,
OH (US)

(21) Appl. No.: 16/629,254

(22) PCT Filed: Jul. 6, 2018

(86) PCT No.: PCT/US2018/041131

§ 371 (c)(1),
(2) Date: Jan. 7, 2020

Publication Classification

(51)	Int. Cl.		
	<i>H01M 4/62</i>	(2006.01)	
	<i>H01M 10/0525</i>	(2006.01)	
	<i>H01M 10/0569</i>	(2006.01)	
	<i>H01M 4/66</i>	(2006.01)	
	<i>C08L 27/16</i>	(2006.01)	
	<i>H01G 11/50</i>	(2006.01)	
(52)	U.S. Cl.		
	CPC	<i>H01M 4/623</i> (2013.01); <i>H01M 10/0525</i> (2013.01); <i>H01M 4/625</i> (2013.01); <i>H01M 10/0569</i> (2013.01); <i>H01G 11/60</i> (2013.01); <i>C08L 27/16</i> (2013.01); <i>H01G 11/50</i> (2013.01); <i>H01M 2300/0028</i> (2013.01); <i>C08L 2201/56</i> (2013.01); <i>H01M 4/661</i> (2013.01)	

ABSTRACT

The present invention provides a slurry composition comprising: (a) an electrochemically active material and/or an electrically conductive agent; and (b) a binder comprising: (i) a polymer comprising a fluoropolymer dispersed in a liquid medium; and (ii) a polymer comprising an addition polymer comprising constitutional units comprising the residue of a heterocyclic group-containing ethylenically unsaturated monomer. The present invention also provides electrodes and electrical storage devices.